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A Brief History of Terrestrial Game Species Management in Virginia: 1900 – Present

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ABSTRACT

Terrestrial wildlife management in Virginia has evolved from a process that condoned the unwarranted elimination of native top predators a century ago to the research-vetted management practices employed today. In this paper, we focus on the evolution of the state game department and changing roles of the individuals who work toward sound game management. We address major national and state laws that have impacted wildlife management, discuss the changing role of game wardens, and introduce the leading characters in the Commonwealth who have battled for stronger, proactive game management laws. The changing needs and interests of the public – mainly a shift from consumptive to non-consumptive wildlife use – also have impacted the way Virginia wildlife has been managed. We follow a decade-by-decade approach as we highlight the historical development of terrestrial game management in the Commonwealth.

Key words: Game Commission, game species, game wardens, Virginia Department of Game and Inland Fisheries, wildlife management.

INTRODUCTION

Nearly a century has elapsed since the inception of a game management agency in Virginia. Over the last 50 years, multiple attempts have been made to summarize this history, ranging from a 342-page dissertation (Reeves, 1960) to magazine articles for the general public (e.g., White, 1976). Many such publications are either out-of-print or generally inaccessible to those with an interest in the history of wildlife management in the Commonwealth. In this paper, we summarize the information and narratives in these publications and interagency reports. In doing so, we describe the humble beginnings of terrestrial game management in Virginia and follow its advancement through the past century.

THE EARLY YEARS: 1900 TO 1919

Since the founding of Virginia in 1788, wildlife game species have been a source of sustenance, as well as sport, for natives and visitors. At its founding, reports of abundant game species were not uncommon. By the early 1900s, game species once used for subsistence living, such as the white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), eastern cottontail (*Sylvilagus floridanus*) and northern bobwhite (*Colinus virginianus*), were perilously close to regional extirpation (Gooch, 2001). Commercial hunting and over-harvesting went hand-in-hand.

Observing this dramatic decline in once-common game species, non-commercial hunters of the early 20th century became the first conservationists. On the national stage, they worked with politicians to pass the Lacey Act. Passed into law on 25 May 1900, the act focused on two main issues: trade of illegally harvested game and non-game and the protection of native birds. The latter issue was addressed by limiting the number of exotic birds introduced, banning some trade of bird feathers, and protecting both game and non-game birds (Anderson, 1995). This law was an important start to conservation and preservation, but did not address many game issues in Virginia.

No state game laws existed in the Commonwealth of Virginia until 1910, when the General Assembly

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passed several minor laws for the protection of game, but these were merely stopgap measures (Anderson, 1995; Gooch, 2001). For example, laws provided a closed season on a few game species trapped for profit: muskrat (*Ondatra zibethicus*), American mink (*Neovison vison*), northern river otter (*Lontra canadensis*), raccoon (*Procyon lotor*), and gray fox (*Urocyon cinereoargenteus*). However, these seasonal limitations were restricted to a few counties where numbers were clearly in decline and there was an environmental authoritative presence to enforce game laws (Hart, 1923). Still lacking were comprehensive state-wide laws and adequate enforcement capabilities on a large scale.

By 1912, sportsmen in Virginia were urging the creation of a state game department to provide protection for harvested wildlife. However, members of the General Assembly were reluctant to give wildlife management its own official department. Instead, they passed more protective acts for (fish and) terrestrial game species, this time on a statewide level (Hart, 1923). There was an emergency closure of the small game and wild turkey (*Meleagris gallopavo*) season due to heavy snows from mid-January until 2 February 1912. Although it is unclear how the General Assembly went about closing a season, the board of supervisors of any county had the right to immediately terminate the season of any game animal given sufficient reason, such as snow or other extraordinary weather. Upon closing, the county board was to immediately post the decision in the nearest town newspaper and send a certified copy of the notice to local authorities (Tyus, 1924).

On 17 June 1916, the Virginia Department of Game and Inland Fisheries (VDGIF) was created under the supervision of the Commission of Fisheries (est. 1875). The charge of this new department was to manage, conserve, and protect the wildlife of Virginia. The fisheries commissioner, John S. Parsons, doubled as the commissioner for this new department for two years until his death in 1918. The first Chief Clerk for the game department was M. D. Hart, a man of "tremendous foresight and enthusiastic drive" (Reeves, 1960). With the help of just two other individuals and an office in the cloak room of the Senate Chamber of the state capitol (VDGIF, 1917), Hart had before him the daunting task of developing an entire game agency. Hart visited well-established game agencies in New York, New Jersey, and Pennsylvania, looking to these agencies as sources of inspiration, knowledge, and logistics about the inner workings of such an office (VDGIF, 1917; Reeves, 1960).

The department received a modest startup loan for assistance during its first year from the state budget. Subsequently, it was funded entirely by the sale of hunting licenses, with no assistance from the state budget. Up until that point, hunting had been considered the right of every person in the state with no fees or bag limits. Now, knowledge of these new rules and regulations needed to be disseminated to the general public and new permits and licenses enforced. Wardens were hired for every county in the Commonwealth from a list of "suitable persons" selected and delivered by the town councils. Such willing individuals were provided "with badges, copies of the game laws, application blanks for hunters' licenses, notices to hunters to be posted in their counties, and … advised to travel their territories as much as possible (VDGIF, 1917)." Game wardens earned a salary of $50-60 per month and were expected to supervise their territories and apprehend and fine offenders (Hart, 1923; Lemmert, 2003).

License fees varied in 1916: county hunting licenses were $1 each, state licenses $3, and non-resident permits were $10 (Hart, 1923; Lemmert, 2003). In its first annual report (1917), the VDGIF applauded its own sales of hunting licenses (over $88,000), taking in substantially more revenue than anticipated (VDGIF, 1917; Hart, 1923). Using this income, plans for restocking of species were developed and implemented. For example, the department imported and stocked 150 elk (*Cervus elaphus*) in the mountainous terrain of western Virginia (albeit a failed effort), and stocked thousands of English ring-necked pheasant (*Phasianus colchicus*) eggs and individuals throughout the state (VDGIF, 1917; Hackman, 1976).

By 1919, game wardens expressed discontent, because their duties increased with no financial compensation. Specifically, the Baker Dog Law was passed that year by the state legislature, requiring wardens to license dogs in their jurisdiction, with all of the income going to the counties of residence. Presumably, those dogs that were not claimed by owners or were feral were destroyed. Through 1922, a reported "25,892 worthless dogs" were euthanized (Hart, 1923). Given this substantial increase in workload, many wardens resigned. In 1920, the Baker Dog Law was amended to give 15% of the license fees to the department to compensate for the extra work expected of them and reestablishing the goodwill of game wardens (Hart, 1923).

1920s

At the beginning of the department's second decade, most predators were considered nuisance species and a threat to terrestrial game animals. Therefore, predators were hunted to boost the game numbers available to

hunters for subsistence and sport. In 1921, the Virginia Game and Fish Protective Association hosted a hawk-killing contest with $250 in prizes (Anonymous, 1921a). While there was "some" justification that "some" predators were harming game populations in the 1920s, these predators were mostly introduced (Anonymous, 1921b). Burton (1937) reported that a single feral cat (*Felis catus)* killed 58 birds in one year and advocated for the control and removal of this nuisance species. The feral cat debate continues today and has yet to be resolved.

Despite the misdirected and uninformed attitudes and actions towards predators at that time, the department was making progress in the restoration of other game species. They established regulated hunting seasons and more stringent law enforcement for game, including ring-necked pheasants, wild turkey, and northern bobwhite (VDGIF, 1917). Such controls were essential for species that were nearly extirpated. For example, white-tailed deer harvests in the 1920s were estimated at less than 800 individuals annually (Gooch, 2001).

The department employed public-friendly tactics to promote knowledge of new game laws, including a bulletin called *Game and Fish Conservationist*. This publication, printed by the department, served to proclaim examples for sportsmen and conservationists, publishing such innovative topics as fish ladders for dams as early as 1922 (DeLaBarre, 1937b). Positive stories were emphasized in the bulletin, like the role female game wardens were playing in halting the trade in illegal game. For example, in 1923, *Game and Fish Conservationist* published images of Mrs. B. M. Miller and Mrs. C. E. Sykes, who were employed as game wardens in the second district, based out of Norfolk. "These efficient wardens, through surveillance of markets and trains, kept 'bootlegging' of game and fish at a minimum" (Lee, 1922; Layne, 1923). This action displayed the foresight and willingness of the department to employ a variety of persons and tactics to successfully enforce their regulations.

In 1924, Virginia's first statewide game law ended county-specific hunting seasons. The Virginia Senate, in Bill #141, set into law a statewide hunting season from 15 November to 31 January (Tyus, 1924). White-tailed deer limits were stringent, limiting take to antlered bucks: one per day and two per season. This new law also required non-resident hunters to purchase a license. The first fishing licenses, available for purchase as a bundled package with hunting and trapping permits, were issued that same year (Tyus, 1924; Gooch, 2001).

In 1926, after a decade of operating under the supervision of the Virginia Fisheries Commission, the Department of Game and Inland Fisheries was granted freedom to self-govern and was no longer controlled by a separate government entity. A name change was included with this new governance. The Virginia Department of Game and Inland Fisheries became the Virginia Commission of Game and Inland Fisheries. Throughout the rest of the 1920s, the Commission, under the direction of W. McDonald Lee (1922–1926), Harry R. Houston (1926), and A. Willis Robertson (1926–1933), focused on restocking game species that had been hunted to near extinction: white-tailed deer, black bear, and wild turkey. For example, in 1929, 150 wild turkeys were purchased for $20 each for captive breeding and restocking in their prime habitat throughout the state (Gooch, 2001).

1930s

New game programs were sluggish throughout the 1930s, in line with a depressed national economy (Hackman, 1976). However, restocked game species from the 1920s were beginning to show signs of visible recoveries. In response to the turkey stocking programs at the end of the last decade, members of the Virginia Cooperative Wildlife Research Unit at Virginia Polytechnic Institute initiated a population study of this species in 1938. Sixty-nine counties now contained wild turkey populations, a dramatic increase in less than a decade (Gooch, 2001). With the State Game Farm also raising wild turkeys (322 individuals reported for the early 1930s) and bobwhite quail (3,349 individuals reported), presumably for release, efforts to recover these game birds continued in full force (Stras, 1949a).

At the federal level, bills were passed in the 1930s that affected wildlife management within the Commonwealth and throughout the United States. The Migratory Bird Hunting Stamp Act of 1934 collected funds to support duck management. Specifically, income was directed towards land purchases for the National Wildlife Refuge system. This land would provide suitable nesting habitat for duck repopulation efforts and terrestrial game species that could make use of these substantial tracts of land and wetlands. Also at a national level, Big Levels Wildlife Management Area in Augusta County was signed over to the U.S. Forest Service in 1935 for experimental wildlife management projects (Stras, 1949b; Gooch, 2001).

Perhaps the most important step toward wildlife restoration and conservation was accomplished in 1937 with the passage of the Federal Aid in Wildlife Restoration Act. Virginia Congressman (and former state game commissioner) A. Willis Robertson and Senator Key Pittman from Nevada co-sponsored the bill to divert an existing 10% excise tax on sporting

firearms and ammunition to the states for wildlife restoration and management efforts. Although the act has been amended several times since 1937, its main elements have remained intact (Stras, 1949b; Gooch, 2001). This tax is used to provide funding to state game and wildlife programs that promote conservation and education.

Educational efforts were also increasing. In 1937, *Virginia Wildlife* was first published as a bulletin of the Virginia Wildlife Federation and the Virginia Wildlife Conservation Education Council in Blacksburg. It replaced *Game and Fish Conservationist*, which had been canceled in 1931 due to the depressed economy (DeLaBarre, 1937b; Gooch, 2001). Like its predecessor, *Virginia Wildlife* was intended to educate the public on wildlife conservation and to encourage active cooperation in game management. The inaugural issue championed the efforts of the Game Commission, which included the reintroduction of white-tailed deer, the abolition of predator bounties, and wildlife education in schools. It also referenced the passage of the Federal Aid in Wildlife Restoration Act that year, stating, "The clouds ahead are lifting; wildlife now has a chance" (DeLaBarre, 1937a). Except for a 4-year hiatus during war time (1942-1946; Patton, 1946), this magazine has continued to educate the public to the present day.

1940s

By the mid-1940s, it was clear that the restocking efforts and land acquisitions of the 1920s and 1930s were having a positive impact on multiple terrestrial game species. Hunter harvests presumably increased, but a statewide monitoring system was lacking. Thus, with the greater use of the land and its resources for hunting and recreation, the Commission implemented more intensive supervision of the wild lands. In 1947, the Commission created a statewide checking station system. Hunters now had to tag their game at a local check station, where sex, age, and other basic information were recorded on each animal. This system allowed for authorities to be better informed about hunter harvests and to adjust seasons accordingly based on population estimates (Gooch, 2001).

The take of white-tailed deer in 1947 was 4,000 individuals, as recorded by the new check stations. An accurate count of black bear harvest (163) also was reported for the first time. Although wild turkeys were still a rarity, Carl Nolting, game commission chairman from 1933 to 1942, estimated that there were ca. 25,000 individuals in the Commonwealth (Gooch, 2001). An American beaver (*Castor canadensis*) restoration program also was enacted in the late 1940s, as this species had been nearly extirpated from overharvesting practices by the fur trade industry (Stras, 1949b; Hackman, 1976; Gooch, 2001).

In the post-Great Depression era, new programs began to spring up. For example, VDGIF appointed a Director of Education in 1949. This followed the 1948 Wildlife Restoration Program established by the Commission, which placed a greater emphasis on public education. The new Education Director established several goals to inform the general public about wildlife management. In addition to providing informational bulletins and pamphlets about game and fish species for use in public schools, the commission turned to films, radio broadcasts, and television shows for educational outreach. Around the same time, the Commission teamed up with the Virginia Department of Education to teach conservation courses at colleges, thus providing future teachers with the skills and knowledge to educate what could be considered the first generation of wildlife managers (Anonymous, 1949).

1950s

In the 1950s, a beneficial shift in habitat management style became evident. Nearly gone were the days of importing farm-grown, pen-raised, or wild-caught individuals from outside of the Commonwealth (Hackman, 1976). While wild turkeys were still being introduced into new counties, the source of the individuals was now in-state. For example, Gooch (2001) described the trapping efforts of wild turkeys from the Gathright Wildlife Management Refuge (Bath County), where turkey populations were thriving, into depleted areas to the east. As stocking efforts declined, a shift in the management paradigm was evident.

Instead of constant stocking, the goal became habitat management or improvement, an attitude embraced in the late 1940s and implemented in the 1950s (Stras, 1949b). Terrestrial game species were now a "crop" that could be managed in a sustainable fashion (Stras, 1949b). Such crops included wild turkeys, white-tailed deer, bobwhite quail, and American beavers. A victory of sorts was celebrated when the first American beaver trapping season opened in 1953; this nearly extirpated species was once again thriving (Hackman, 1976).

By the late 1950s, there were 607,287 ha of National Forest land in Virginia, 600,000 sportsmen, and just 138 game wardens to supervise them all (Gooch, 2001). More refuges were purchased, including Hog Island Waterfowl Refuge (1951; Hackman, 1976), Gathright Wildlife Management Refuge (1957; source of the wild turkeys), and Saxis Waterfowl Refuge (1957; Gooch, 2001). These new territories required

constant monitoring to maintain the integrity of the refuges for their intended purposes. On a related note, while the duties of game wardens were constantly increasing, acknowledgement of their efforts also increased. In 1959, VDGIF created the "Game Warden of the Year" award for those individuals that far exceeded the minimal requirements of the job and showed true dedication to their work (Hackman, 1976; Gooch, 2001).

1960s

The 1960s also saw contradictory healing and exploitation of game. Northern bobwhites were harvested in excess of 1.4 million birds during the 1965-1966 hunting season; demand was high, despite the acknowledgement that the population was in decline. Similarly, eastern cottontails were on a steep decline for reasons that could not be explained at the time. Although wild turkey harvests averaged just 280 individuals, the presence of any harvest was considered a success. White-tailed deer continued to recover, with harvests averaging 25,000 individuals per year (Gooch, 2001).

Habitat management techniques first implemented in the 1950s continued to evolve and improve. No longer were high-effort bulldozing and subsequent seeding efforts utilized to create or maintain early successional habitats for quail, eastern cottontails, and other game species. Instead, techniques were becoming more fine-tuned and less labor-intensive. The same bulldozed habitats could now be maintained by the time-efficient occasional prescribed burn, or small-scale, selective tree removal (Hackman, 1976).

The education efforts directed towards hunters were also changing. In 1961, hunter safety training classes were established with the goal of training every hunter in the basics of gun safety and ethical treatment of game. White (1976) reported that these classes educated over 167,000 Virginians in the first 15 years of operation.

1970s

By the early 1970s, game numbers had rebounded to allow for hunting harvests that rivaled pre-Civil War abundance. The white-tailed deer harvest was close to 50,000 individuals annually and wild turkey populations had recovered to the point where harvests reached 2,500 individuals/year (Gooch, 2001). Northern bobwhite harvests peaked in 1970 at approximately 1.5 million birds (Norman & Puckett, 2008). Black bear populations also were increasing, with the harvest reaching nearly 300 individuals in 1971 (Gooch, 2001; Klenzendorf, 2002). At that time, the state population of bears was estimated at 1,660 individuals, up from <1,000 in 1951 (Gooch, 2001).

Although the cost of maintaining or restoring game species increased, the cost of licenses had stayed much the same since 1916. Chester F. Phelps, director of the Commission from 1958-1978, saw an impending funding crisis and opted to increase the cost of licenses. These newly collected fees supported the active management of almost 800,000 ha of land. Commission staff drew from many resources to manage these lands for public enjoyment and enforce hunting regulations (Stras, 1949b; Gooch, 2001). Game wardens continued to be an important resource. In addition to patrolling for poachers, they were charged to contain illegal tree harvesting and to survey rugged and mountainous terrain. In the line of duty, through 1972, eight game wardens lost their lives. Causes were anthropogenic, and individuals with a blatant disregard for the law and the hunted animals were the guilty parties (Gooch, 2001; Eliason, 2011).

1980s

As further proof that wildlife managers were performing their duties with dedication and determination, some species had become so abundant that their seasonal bag limits were increased statewide. For example, during the 1985-1986 seasons, VDGIF increased bag limits for white-tailed deer from two to three. With an increase in hunting and therefore warden responsibilities, game wardens needed more authority to ensure that they could perform their jobs adequately. In 1982, wardens were granted general law enforcement powers, the same as local and state police officers (Randolph, 1996; Gooch, 2001).

Although hunting licenses were still a reliable source of funds for the agency, VDGIF reached out to an alternate source of funding. In 1982, taxpayers had the option to donate their tax refunds directly to the non-game division of VDGIF. A checkbox on the state tax form allowed them to donate some or all of their returns to non-game conservation. The program netted over $350,000 in its first year, and donations peaked at $752,840 by 1987. These funds assisted with programs in parks and conservation that were not currently funded by the Pittman-Robertson Act (Gooch, 2001; U.S. Fish and Wildlife Service, 2012).

During this time, lawmakers also set safety as a priority. Blaze orange became mandatory for white-tailed deer hunters in 1987. By 1988, hunter education courses were required prior to purchasing a license. This thinking was no doubt beneficial for wildlife as well, as more educated hunters would wait for a more

humane kill and be more knowledgeable about their ethical limits and ranges of fire (Gooch, 2001).

The Commission of Game and Inland Fisheries again experienced a name change in 1987. In a move that was purely administrative, the Commission returned to its original title, the Virginia Department of Game and Inland Fisheries (VDGIF; V. Shepherd, pers. comm.).

1990s

By the 1990s, outdoorsmen spent over $2 billion annually on Virginia wildlife recreation. This group included not only hunters and fishermen, but also non-consumptive users such as birdwatchers, kayakers, hikers, bikers, cavers, and other outdoor enthusiasts. Some species of wildlife were flourishing under the new attention and adapting rapidly to urban settings. White-tailed deer had increased to such an extent that some limitless tags were sold to reign in populations and curtail damage to crops and ornamental gardens (Gooch, 2001). Black bear populations were estimated around 3,000 to 3,500 in 1993, with 600 or more bears harvested per year by the mid-to-late 1990s. Several seasons for bears were implemented, including two archery seasons that overlap with a gun season. Seasons with and without dogs also were introduced. This strong interest in bears has led to stricter bag limits on this species (Pelton, 1999; Gooch, 2001).

Despite these advances in black bear and white-tailed deer management, not all species were thriving with human intervention and hunting. Harvest reports for the northern bobwhite, historically exceeding 1.5 million, had declined to 160,000 individuals by 1997. The reasons for their disappearance were tied to the replacement of early successional habitat by later successional stages in the last century. As bobwhite became harder to harvest, the desire to hunt them declined precipitously. Because game management often follows a supply-and-demand relationship, successful bobwhite management suggests that densities need not return to historic levels to meet the needs of today's hunters (Penhollow & Stauffer, 2000; Gooch, 2001).

2000 TO PRESENT

Current VDGIF Executive Director, Robert Duncan, stated, "Today, our problem is more one of managing our rich wildlife resources than trying to increase our numbers" (Gooch, 2001). Indeed, many species-specific management plans emphasize maintaining populations rather than expanding them. This is the case for white-tailed deer (VDGIF, 2007), which have been harvested in record numbers over the last decade (e.g., 222,074 in 2010 and 231,454 in 2011; Thompson, 2012). The estimated statewide black bear population was nearly 5,000 in 2001, with continued increases expected (Gooch, 2001). Black bear harvests reached record highs, with 2,221 taken in 2010 and 1,997 in 2011 (Thompson, 2012).

Although wild turkey densities and harvests are variable across the Commonwealth, the statewide population was estimated at 150,000 individuals by 2010. Harvests for turkeys were reported at 3,470 in 2011 and 2,678 in 2010 (Norman, 2008; Thompson, 2012).

Only a few game species, including bobwhite quail and elk, are currently being managed for marked increases in the next decade. Despite a 92% decline in the number of bobwhite licenses sold (since 1970), VDGIF is looking to recover early successional habitats and educate the public about the importance of quail to hunters (Norman & Puckett, 2008). The success of this educational push is uncertain: in 2005, 66,384 bobwhite were harvested, and this harvest has continued to decline. Just 40,782 bobwhite were taken in 2010 (VDGIF, 2012). The reintroduction of elk in March 2012 into Buchanan County follows successful management efforts in neighboring Kentucky (VDGIF, 2010; A. Boynton, pers. comm.). As elk migrated into the Commonwealth from Kentucky, pressure mounted for VDGIF to initiate its own reintroduction process. If the growth of Kentucky's elk population (1,555 introduced in 1998; >10,000 in 2012; A. Boynton, pers. comm.) is any indication of future success in Virginia, this once-extirpated ungulate may become a commonly hunted species in future years.

In response to new federal mandates regarding funding eligibility for state wildlife grants, a Virginia wildlife action plan (WAP) was developed in recent years. The ultimate goal of the WAP was "to identify key species and habitats in need of conservation and to prioritize actions and research needs for future statewide conservation activities for all interested Virginians" (VDGIF, 2005). The WAP includes management of both game and non-game species and efforts are prioritized according to Virginia's physiographic regions. By 2001, VDGIF managed more than 35 wildlife management areas covering 80,971 ha.

CONCLUSION

VDGIF's shift from strictly game species management to a focus on non-game species, public education, land management, and conservation is not a new one. In light of public attitudes shifting from consumptive wildlife uses (hunting, fishing) to

primarily non-consumptive uses (birdwatching, recreational boating, hiking, and biking), the direction of the agency is constantly adapting to the needs of the wildlife species and the public. This trend is evident by the number of hunting licenses sold in 2010 (245,185), which is approximately half that for 1974. In recent years, a 1-3% annual decline in license sales is not uncommon for Virginia and neighboring states (Greene, 2011).

Nearly a century ago, VDGIF was an agency in its infancy, entirely dependent upon license sales to finance their management initiatives. Today, other avenues of funding are available, although license sales still constitute 38% of the 2011 budget (VDGIF, 2011). This shift away from hunting has caused the agency to reassess its goals, budget allocations, and management directions. As VDGIF nears its centennial in 2016, its current strategic plan emphasizes the need to reconnect the public with the wildlife around them. Although much has changed since 1916, some goals and attitudes remain the same:

> "With continued protection and proper restrictions on hunting seasons, quail, [ruffed] grouse [(*Bonasa umbellus*)] in the western part of the State, and even deer and wild turkey in many localities will again become plentiful as a result of their natural increase in the open, the climate of Virginia making her fields and forests the ideal habitat of all of these."
>
> First annual report of the Department of Game and Inland Fisheries of Virginia: ending June 30, 1917.

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